

H10581

NOAA FORM 76-35A	
U.S. DEPARTMENT OF COMMERCE NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION NATIONAL OCEAN SERVICE	
DESCRIPTIVE REPORT	
Type of Survey	HYDROGRAPHIC/SIDE SCAN SONAR
Field No.	WH-10-11-94
Registry No.	H-10581
LOCALITY	
State	GEORGIA
General Locality	WILMINGTON RIVER
Sublocality	WASSAW SOUND TO WILLIAMSON CREEK
19 94	
CHIEF OF PARTY COMMANDER J. D. WILDER, NOAA	
LIBRARY & ARCHIVES	
DATE	SEP 7 1995

Diagram 1241-3

A/G

L-1007 (95)

CP-4

11512

11507 A ext

11509

NOAA FORM 77-28 (11-72)	U.S. DEPARTMENT OF COMMERCE NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION
<b>HYDROGRAPHIC TITLE SHEET</b>	
REGISTER NOS.  <div style="border: 1px solid black; padding: 5px; display: inline-block; margin-top: 10px;">H-10581</div>	
INSTRUCTIONS - The Hydrographic Sheet should be accompanied by this form, filled in completely as possible, when the sheet is forwarded to the Office.	FIELD NO.  <div style="border: 1px solid black; padding: 5px; display: inline-block; margin-top: 10px;">WH-10-11-94</div>

State	Georgia		
General locality	Wilmington River		
Locality	Wassaw Sound to Williamson Creek		
Scale	1:10,000	Date of Survey	29 Sep - 14 Nov 1994
Instructions dated	August 25, 1994	Project No.	OPR-G115-WH
Vessel	NOAA SHIP WHITING S-329 EDP#2930		
Chief of Party	CDR JOHN D. WILDER		
Surveyed by	CDR J.D. WILDER, LCDR S.R. BARNUM, LT W.G. KITT, LT A. BEAVER, LTJG E.W. BERKOWITZ, ENS K. PAVELLE, ENS C. PARRISH, ENS J. MICHALSKI, F.R. CRUZ, J. GASKIN, M. CISTERNELLI, B.C. DETRICH		
Soundings taken by echo sounder	DSF-6000N		
Graphic record scaled by	WHITING SURVEY PERSONNEL		
Graphic record checked by	WHITING SURVEY PERSONNEL		
Protracted by	N/A	Automated plot by	ERIC D. NOVASET III (AHR) HP 7959B, BRUNING (FIELD)
Verification by	ATLANTIC HYDROGRAPHIC BRANCH PERSONNEL		
Soundings in MLLW	DATUM AND DEPTHS IN UNITS OF METERS FEET		

REMARKS: TIME ZONE USED, 0 (UTC)  
  
 NOTES IN THE ORIGINAL DESCRIPTIVE REPORT WERE MADE IN  
 RED DURING OFFICE PROCESSING.  
  

12-16-96  
 SEP 7 1995 *DSC* AWOIS + SURF ✓ 7/96 *RWD*

**DESCRIPTIVE REPORT TO ACCOMPANY  
HYDROGRAPHIC SURVEY  
OPR-G115-WH  
WH-10-11-94  
1994  
H-10581**

**NOAA SHIP WHITING  
CDR John D. Wilder, NOAA  
Commanding Officer**

**A. PROJECT**

Project OPR-G115-WH covers the approach to Wassaw Sound, Wassaw Sound, the Wilmington and Skidaway Rivers. WHITING is conducting basic hydrographic surveys in these areas.

Project OPR-G115-WH is divided into four survey sheets. The survey described in this report was designated "A" Sheet, Wassaw Sound to Williamson Creek, Wilmington River, Georgia. The assigned field sheet number is WH-10-11-94, and the registry number is H-10581.

Survey operations were conducted in accordance with Hydrographic Project Instructions OPR-G115-WH, Wassaw Sound and Wilmington River, Georgia, dated August 25, 1994. Survey H-10581 is registered as a 1:10,000 scale and all data acquired meet the accuracy requirements for a 1:10,000 scale survey.

**B. AREA SURVEYED**

Hydrographic survey H-10581 covers Wassaw Sound and the Wilmington and Skidaway Rivers.

Survey operations began on September 29, 1994 (DN 271) and ended on November 14, 1994 (DN 318). Data were acquired on the following days:

<u>DN</u>	<u>Date</u>
279	September 29
284	October 11
285	October 12
286	October 13
289	October 16
290	October 17
300	October 27
301	October 28
302	October 29
303	October 30
308	November 4
312	November 8
313	November 9
315	November 11
316	November 12
317	November 13
318	November 14

#### C. SURVEY VESSELS

NOAA launch 1014 (VESNO 2932) and launch 1015 (VESNO 2931) were used for all sounding data acquired.

No unusual vessel configurations were used.

#### D. AUTOMATED DATA ACQUISITION AND PROCESSING

Survey data acquisition and processing were accomplished using the HDAPS system with the software listed on the next page:

<u>Program</u>	<u>Version</u>	<u>HDAPS Date</u>
BACKUP	2.00	March 07, 1994
BASELINE	1.14	March 07, 1994
BIGABST	2.07	March 07, 1994
BIGAUTOST	3.01	March 07, 1994
BLKEDIT	2.02	March 07, 1994
CARTO	2.13	August 30, 1994
CLASSIFY	1.01	March 07, 1994
CONTACT	2.34	August 30, 1994
CONVERT	3.62	March 07, 1994

DAS_SURV	6.70	August 30, 1994
DIAGNOSE	3.04	August 30, 1994
DISC_UTIL	1.00	March 07, 1994
DP	2.15	August 30, 1994
DPCONVERT	1.01	June 17, 1994
DSNEDITS	1.02	August 30, 1994
EXCESS	4.31	August 30, 1994
FILESYS	3.24	August 30, 1994
GRAFEDIT	1.06	March 07, 1994
HIPSTICK	1.01	March 07, 1994
HPRAZ	1.26	March 07, 1994
INVERSE	2.01	March 07, 1994
LISTDATA	1.02	March 07, 1994
LOADNEW	2.10	March 07, 1994
LSTAWOIS	3.07	August 30, 1994
MAINMENU	1.20	March 07, 1994
MAN_DATA	2.01	March 07, 1994
NEWPOST	6.12	August 30, 1994
PLOTALL	2.30	August 30, 1994
POINT	2.10	March 07, 1994
PREDICT	2.01	March 07, 1994
PRESURV	7.09	August 30, 1994
PRINTOUT	4.04	August 30, 1994
QUICK	2.05	August 30, 1994
RAMSAVER	1.02	March 07, 1994
REAPPLY	2.11	August 30, 1994
RECOMP	1.02	March 07, 1994
SCANNER	1.00	March 07, 1994
SELPRINT	2.05	August 30, 1994
SYMBOLS	2.00	March 07, 1994
VERSIONS	1.00	March 07, 1994
ZOOMEDIT	2.30	August 30, 1994

Sound velocity corrections were determined using programs CAT (version 2.00) and VELOCITY (version 2.10).

There were no nonstandard automated acquisition or processing methods used.

#### **E. SIDE SCAN SONAR EQUIPMENT**

Side scan sonar (SSS) operations were conducted using an EG&G model 260 slant-range corrected SSS recorder and an EG&G 272-T dual-channel, single-frequency towfish. The towfish was operated

on the 100-kHz frequency and was configured with a 20° beam depression. Serial number (S/N) for the SSS towfish was 016630 and the recorder was 016671.

The SSS towfish was deployed using a Superwinch Model W115 in conjunction with an adjustable davit arm on the stern of the launch. The SSS towfish was towed with vinyl-coated Kevlar cable and was connected to the recorder via a slip ring assembly.

Side scan sonar data were collected utilizing the 50-meter range scale. The SSS was used to investigate AWOIS items located within the survey area. No SSS investigation was required for any of the items however, WHITING felt SSS would be an effective means to investigate the items.

Side scan sonar data was also collected in the Wilmington River between the Savannah Sheraton Hotel pier and Light "27". This was in response to a report by a staff member of the Skidaway Institute about possible SSS contacts in this area. WHITING's investigation of the area showed no evidence of SSS contacts.

The SSS towfish was maintained at a height off the bottom of 8 to 20 percent of the range scale. SSS operations were limited to a speed-over-ground of 4.5 knots.

Confidence checks were performed by noting changes in bottom texture on the outer edges of the sonargram.

All significant contacts were measured off the sonargrams and entered into an HDAPS contact table. WHITING hydrographers determined contact heights, positions, and cross-reference correlations using the HDAPS Contact Utility Program. The items were then further examined by diver investigation. Refer to Section **N.** and Separate **V** for more information.

#### **F. SOUNDING EQUIPMENT**

Raytheon Digital Survey Fathometer (DSF) 6000N echo sounders were used to measure bottom depths during the survey. The DSF 6000N produced a graphic record of the high frequency (100 kHz) and low frequency (24 kHz) bottom depths. Digital depths from the high frequency and low frequency beams were recorded by the HDAPS

acquisition system. High frequency depths were selected as the primary depths and are shown on the sounding plots. Echograms were carefully reviewed for significant features along the track line. Any features on the graphic record that were not selected as primary soundings were manually inserted.

Electronic technicians performed accuracy checks and preventive maintenance on all of the DSF-6000N echosounders used. As a result, the echosounders S/N A105N, A108N and A109N operated throughout the survey period without any major problems.

#### G. CORRECTIONS TO SOUNDINGS

Sound velocity profiles of the water column were determined using a Seacat Conductivity, Temperature and Depth (CTD) profiler (model SBE-19, S/N 286). The CTD's annual calibration was performed on December 17, 1993.

A Data Quality Assurance (DQA) test was performed during each CTD cast by using a hydrometer and a thermometer to measure the density and temperature of a surface water sample. Program CAT compared these values to the Seacat's surface values to confirm that the velocity probe was working properly. There were no variations in instrument initials.

After each CTD cast, programs CAT (version 2.00) and VELOCITY (version 2.10) were used to process the data, to select significant data points, and to create a corrector table for each vessel. The velocity correctors were manually entered into each HDAPS velocity table. Velocity profile data are in the Separates submitted with this survey. Seven velocity casts were conducted for H-10581:

<u>DN</u>	<u>Vel.Table#</u>	<u>Latitude</u>	<u>Longitude</u>	<u>Depth</u>
279	5,6	31° 56'14"N	080° 58'23"W	9.5
285	7,8	32° 00'13"N	081° 00'14"W	12.7
289	12	31° 58'40"N	081° 02'47"W	21.3
302	16	32° 00'40"N	081° 00'06"W	7.9
308	19	31° 55'40"N	080° 57'10"W	15.2
312	20	31° 58'42"N	081° 02'42"W	20.4
316	25	31° 58'23"N	081° 03'05"W	21.3

All sounding corrections were applied to both the narrow (100 kHz) and wide (24 kHz) DSF-6000N beams.

Bar checks were performed on launch 1014 and launch 1015 in accordance with the requirements stated in the Field Procedures Manual (FPM). No corrections to soundings were applied based on bar check data.

The correction for the static draft for launches 1014 and 1015 is 0.55 meters, as measured on July 28, 1993.

Settlement and squat measurements for launch 1014 (Offset Table 2) and launch 1015 (Offset Table 1) were conducted and correctors determined on April 4, 1994. The correctors were applied in real time throughout the survey. The settlement and squat correctors were applied to the sounding data in real time on each survey platform. Settlement and squat corrector tables are in Separate IV. DATA FILED WITH FIELD RECORDS

Heave correctors were applied during post processing for launches 1014 and 1015 by manually scanning the echograms.

The tidal datum for this project is Mean Lower Low Water. The operating tide station at Fort Pulaski, Georgia (867-0870) served as the reference station for predicted tides. The Survey area is covered by nine tide correction zones, tidal corrections were applied in accordance with the project instructions sections 5.8.2 and 5.8.3.

Tidal data used during data acquisition were taken from Table 2 of the East Coast of North and South America Tide Tables and were applied to the digital data during acquisition by HDAPS. Digital tidal data were received on floppy disk from N/CG24, Hydrographic Surveys Branch.

WHITING installed and leveled four ADR tide gauges for datum control on H-10581. The following table lists the station names, numbers and locations:

<u>Station Number</u>	<u>Station Name</u>	<u>Latitude</u>	<u>Longitude</u>
867-1314	Half Moon Fishing Reef Wassaw Sound, Georgia	31°57.8'N	080°56.6W

<u>Station Number</u>	<u>Station Name</u>	<u>Latitude</u>	<u>Longitude</u>
867-1315	Priest Landing Wilmington River, Georgia	31°57.8'N	081°00.7W
867-1086	Skidaway Institute Skidaway River, Georgia	31°59.4'N	081°01.4'W
867-0893	Palmer Johnson Shipyard Wilmington River, Georgia	32°01.6'N	081°02.8'W

WHITING received permission from Mr. Mike Gibson, N/OES21 on October 14, 1994 to install only a staff for datum control at Turner Creek, instead of an ADR gauge and staff. WHITING personnel made observations of the staff for two highs and lows during survey operations in Turner Creek. WHITING also ran levels to an existing historical benchmark before and after data acquisition in Turner Creek.

During a severe storm on October 12, 1994, the tide gauge well at Priest Landing separated at a PVC joint. It was removed by WHITING personnel at that time. The gauge was reinstalled on October 13, 1994. WHITING contacted LT John Humphrey, NCG24 concerning this incident. In accordance with his instructions, WHITING recorded staff and gauge readings every 18 minutes for two hours to check the comparison. All comparisons were within 0.03 feet. WHITING also ran levels to two benchmarks to confirm the staff had not moved. These levels closed to within 0.03 feet.

The tide notes for each station are on file at AHS. The request for smooth tides was submitted to the Product and Services Branch, N/OES231, Datums Section, on November 21, 1994.

DATA SUBMITTED WITH THIS REPORT. APPROVED TIDES AND ZONING WILL APPLIED DURING OFFICE PROCESSING

**H. CONTROL STATIONS** SEE ALSO SECTION H. OF THE EVALUATION REPORT.

The horizontal datum for this project is the North American Datum of 1983 (NAD 83). WHITING installed a differential GPS (DGPS) transmitter on Tybee Island, Georgia using the existing 3rd order horizontal control station, SOUTH END. Another existing station, JONES ISLAND RANGE FRONT LIGHT, was used as a known point for performance checks. The positions (NAD83) are as follows:

<u>Station</u>	<u>Position</u>
SOUTH END	31°59'14.307"N 080°51'04.851"W
JONES ISLAND RANGE	
FRONT LIGHT	32°02'31.712"N 080°51'10.092"W

This information was provided by N/CG23 on August 16, 1994.

The DGPS station consists of an Ashtech XII GPS receiver (S/N 700354B2395) and a Maxon Electronics VHF transceiver (S/N 53964). The Ashtech XII receiver has the control station's position programmed in. The unit receives position information from the GPS satellites and calculates correctors to be applied. The corrector information is sent to the Maxon VHF transceiver which transmits the corrector information.

Program MONITOR version 1.2, in conjunction with an Ashtech Sensor GPS receiver and Maxon VHF transceiver, was used to conduct a 24-hour scatterplot of the differential GPS signal in order to determine if multipath errors were occurring. The *OUTLIER.SUM* file and associated scatter-plot are in Separate III.\* The scatterplot showed no signs of multipath error.\* DATA FILED WITH FIELD RECORDS

## I. HYDROGRAPHIC POSITION CONTROL

A Differential Global Positioning System (DGPS) was used as the navigation system for this survey. WHITING launches used Ashtech Sensor GPS receivers with VHF radio receivers supplying corrector for DGPS navigation. Ashtech receivers were initialized by HDAPS and VHF receivers were tuned to the correct frequency via controls on the front of each unit.

DGPS positioning was accomplished in accordance with the FPM, section 3.4. Horizontal Dilution of Precision (HDOP) limits were computed as required in section 3.4.2 of the FPM. The HDOP limit for a 1:10,000 scale survey using the South End station was 5.5.

The serial numbers of the Ashtech Sensor and VHF receivers used are as follows:

<u>Vessel</u>	<u>Device</u>	<u>Serial Number</u>
Launch 1014	Ashtech Sensor	700417B1203
	TAD MD-150	57534
	FM Mobile Transceiver	
Launch 1015	Ashtech Sensor	700417B1191
	Maxon Electronics	20813457
	SM-3010-H VHF Transceiver	

DGPS performance checks were conducted in accordance with FPM section 3.4.4.2. Using a known point, one of WHITING's launches recorded ten HDAPS positions at that point, offsets and azimuths were estimated by WHITING personnel. These positions were compared to the known position and differences were calculated to ensure the Error Circle Radius (ECR) was less than 15 meters. At the end of the day, with both launches secured in their davits, simultaneous HDAPS positions were compared between the launches and the ship. Offsets in distance and azimuth between the ship and each launch system were then applied, and all DGPS performance checks confirmed the DGPS positioning systems were operating properly. A summary of the DGPS performance checks was sent to N/CG244 under separate cover.

DGPS antenna offsets and laybacks were measured on July 28, 1993 for launches 1014 and 1015. Offsets and laybacks were measured using the 100 kHz (high frequency) echosounder transducer as the reference. Antenna heights were also measured on the same respective dates shown above, using the water line as the reference. The offsets and laybacks were applied by HDAPS on-line. A minimum of four satellites were used during survey H-10581 (1:10,000), providing altitude unconstrained positioning.

All offset, layback, and height data were applied by HDAPS on-line. These data are on file at N/CG244. Correctors from offset table 1 were applied to all data acquired on launch 1015. Correctors from offset table 2 were applied to all data acquired on launch 1014.

#### **J. SHORELINE** SEE ALSO SECTION 3. OF THE EVALUATION REPORT.

No photogrammetric data were available for this project. In accordance with Project Instructions, shoreline features were

traced from enlargements of Chart 11512. Existing shoreline was compared to the charted shoreline. Discrepancies in the current charted shoreline were noted at the northeast corner of Wassaw sound, specifically Williamson Island. Other discrepancies were noted at the southeast corner of Williamson Island and both Sister Islands in the Wilmington River.

WHITING recommends aerial shoreline photography be acquired and applied for the survey area prior to the publication of a new chart. 200002

#### K. CROSSLINES

Forty-four nautical miles of crosslines were run on H-10581. This amounted to 12 percent of the total linear nautical miles of main-scheme lines.

The following summarizes the agreement between crosslines and main-scheme lines:

<u>Area</u>	<u>Difference (m)</u>
Bull River	0.1
Wassaw Sound	0.3
Wilmington River	
Wassaw Sound to Romerly	
Marsh Creek	0.4
Romerly Marsh Creek to	
Priest Landing	0.3
Priest Landing to	
Sister Island	0.7 to 1.0
Sister Island through	
Thunderbolt	0.3
Skidaway River	0.4
Turner Creek	0.2

The large difference between crosslines and main-scheme lines in the Wilmington River between Priest Landing and Sister Island are due to a severe storm on October 12, 1994. The storm caused major flooding within the survey area. The main-scheme lines in this area were run during the storm and shortly after the storm. The crosslines were run a few weeks after the storm. The crosslines in this area are shoaler then the main-scheme lines.

This confirms the fact that actual tide values were higher than predicted tide values in the days that followed this storm.

A copy of graphs of observed tides and predicted tides is included in Appendix V.\* The graphs show a significant difference in the predicted and observed tidal values for a few days after October 12.\* DATA FILED WITH FIELD RECORDS

**L. JUNCTIONS** *SEE ALSO SECTION L. OF THE EVALUATION REPORT.*

Survey H-10581 junctions with current surveys H-10576 (WH-10-9-94) and H-10582 (WH-10-12-94). The agreement between H-10576 was within 0.3 meters. The agreement between H-10582 was within 0.2 meters.

**M. COMPARISONS WITH PRIOR SURVEYS** *SEE ALSO SECTION M OF THE EVALUATION REPORT.*

Comparisons between current survey depths and prior surveys show the Wilmington and Skidaway Rivers and Wassaw Sound to be fairly stable. Minor changes were noted at bends in the Wilmington River. The most significant change was noted at the mouth of the Bull River at the northeast corner of Wassaw Sound.

At some bends in the Wilmington River, the banks of the channel have shifted slightly on both sides. On the inside of the bend the banks have extended into the channel approximately 50 meters. On the outside of the bend, the banks have been carved out slightly by the river.

At the northeast Corner of Wassaw Sound, the bottom has undergone some significant changes. At the mouth of the Bull River, the northern bank has extended to the southwest approximately 250 meters while the deep water on the south side also moved to the southwest by about 200 meters.

Survey H-10581 soundings were compared with prior surveys H-5574a (1934, scale 1:10,000) and H-5599 (1934, scale 1:20,000). Both prior surveys were referenced to NAD 27. For comparison purposes, a datum shift was applied to H-10583 in accordance with section 7.4 of the FPM (NADCON, version 1.01, January 9, 1989). Comparisons were made between survey H-10581 soundings plotted at

predicted MLLW and both prior survey sounding sheets plotted at MLW.

Current survey soundings were generally deeper than prior survey soundings. Sounding comparisons between both prior surveys and H-10581 were as follows:

<u>Area</u>	<u>Difference (m)</u>
Bull River	0.7
Wassaw Sound	0.7 - 0.9
Wilmington River	
Wassaw Sound to Romerly	
Marsh Creek	0.4 - 0.6
Romerly Marsh Creek to	
Priest Landing	0.4
Priest Landing to	
Skidaway River	0.3
Skidaway River through	
Thunderbolt	0.3
Skidaway River	0.5
Turner Creek	0.2

#### **N. ITEM INVESTIGATIONS**

The following items were investigated by WHITING. Side scan sonar was used in areas where water depths allowed. Several of the items were visible features near shore.

<u>Section</u>	<u>AWOIS Item</u>	<u>Status</u>
N1.	8903	Disproved
N2.	8904	Verified
N3.	8905	Disproved
N4.	9008	Verified
N5.	9009	Disproved
N6.	9010	Verified
N7.	9011	Disproved

<u>Section</u>	<u>SSS Contact #</u>	<u>Status</u>
N8.	7796.00S	
	7799.14S	Verified

**N1.** AWOIS 8903

**Reported Position:**

Latitude: 31° 56' 18.780" N  
 Longitude: 080° 55' 33.390" W  
 Reported Depth: N/A  
 Feature: Piles

The shoreline in this area has changed considerably, see section M. WHITING launches were unable to get within 75 meters of the reported position due to shallow water. A visible search revealed that no piles were in the area. WHITING recommends this item be deleted from the chart. ~~CONCUR~~

**N2.** AWOIS 8904

**Reported Position:**

Latitude: 31° 57' 05.000" N  
 Longitude: 080° 59' 35.000" W  
 Reported Depth: N/A  
 Feature: Shoaling reported

The area around this feature was developed in accordance with the AWOIS survey requirement printout dated August 15, 1994. The development confirmed shoaling was occurring in the area. Depths of 0.9 meters (3 ft) extend out to the previously charted 5.7 meter (18 ft) contour. ~~CONCUR~~

*IT IS RECOMMENDED THAT THE NOTATION, CHL REP, 1972 BE DELETED AND THE AREA CHARTED AS SHOWN ON PRESENT SURVEY*

**N3.** AWOIS 8905

**Reported Position:**

Latitude: 32° 00' 38.760" N  
 Longitude: 081° 00' 03.400" W  
 Reported Depth: (2 ft)  
 Feature: Sounding

A 300-meter search radius around the reported position was investigated by echosounder with 5-meter line spacing.

Additional perpendicular lines were run with 10-meter line spacing. This development showed no depths shoaler than 1.2 meters (4 ft). WHITING recommends the charted reported depth of 2 ft be deleted from the chart. *CONCUR*

**N4.** AWOIS 9008

Reported Position:

Latitude: 31° 59' 21.000" N  
Longitude: 081° 02' 14.000" W  
Reported Depth: N/A  
Feature: Piles

These items were positioned on DN 300, DP #931, 26 meters from the reported position for this item. WHITING recommends charting these items as:

"Piles" at 31° 59' 20.218" N, 081° 02' 14.457" W. *CONCUR*  
*IT IS ALSO RECOMMENDED THAT THE CHARTED PILES, PA BE DELETED.*

**N5.** AWOIS 9009

Reported Position:

Latitude: 31° 58' 54.760" N  
Longitude: 081° 03' 17.400" W  
Reported Depth: Mast extends 2 ft above water  
Feature: Dangerous submerged wreck (PA)

The item was investigated with SSS. Due to the shallow depths of water in parts of the search radius, the 50-meter range scale was used at 10-meter line spacing. In raw depths less than 5-meters, echosounding was used at 3-meter line spacing. No contacts were found within the search radius.

Local reports from an area fisherman indicated the sailboat had been removed approximately 5 to 6 years ago. WHITING contacted the Army Corps of Engineers (ACOE). They were unable to provide documentation to support this report, however, Mr. Tom Fischer of the ACOE witnessed the sailboat's removal by contractors for the ACOE. Mr. Fischer was unable to recall an exact date of the removal of this wreck. Mr. Fischer can be reached at:

Army Corps of Engineers  
Regulatory Branch  
P.O. Box 889  
Savannah, Georgia 31402-0889  
912-652-5348

WHITING recommends this item be deleted from the chart. *CONCURE*

**N6.** AWOIS 9010

Reported Position:

Latitude: 31° 58' 46.760" N  
Longitude: 081° 03' 16.400" W  
Reported Depth: N/A  
Feature: Piles

This item was positioned on DN 300, DP # 916. This position is 83 meters from the reported position. WHITING recommends charting this item as:

"Piles" at 31° 58' 44.519" N, 081° 03' 16.591" W. *CONCURE*

**N7.** AWOIS 9011

Reported Position:

Latitude: 31° 58' 14.000" N  
Longitude: 081° 03' 06.000" W  
Reported Depth: N/A  
Feature: Wk (Sunken barge near shore)

The item was investigated with SSS. Due to the shallow depths of water in parts of the search radius, the 50-meter range scale was used at 10-meter line spacing. The SSS was towed as close to shore as possible within the search radius. An old pier located at the center of the search radius along with the existence of submerged tree trunks near shore did not allow for a complete development of the search radius from the end of the pier towards shore. No contacts were found within the search radius.

The pier mentioned above was positioned on DN 315, DP # 7779, 5 meters from the reported position of the AWOIS item. Local

reports from an area fisherman indicate the barge has not been visible for several years.

WHITING recommends that the barge be deleted from the chart.\* The pier positioned by WHITING is not charted and poses a hazard to navigation. WHITING recommends the pier be charted at:

31° 58' 13.866" N, 081° 03' 06.106" W. CONCUR  
\* DO NOT CONCUR - SEE ALSO SECTION O OF THE EVALUATION REPORT.

**N8.** Contact 7796.00S and 7799.14S

Contact 7796.00S

Latitude: 31° 58' 09" N  
Longitude: 081° 03' 08" W  
Least Depth: 5.0 meters  
Description: Submerged concrete boxes

Contact 7799.14S

Latitude: 31° 58' 08" N  
Longitude: 081° 03' 08" W  
Least Depth: 4.6 meters  
Description: Submerged concrete boxes

These items were located by SSS outside of the prescribed search radius of AWOIS 9011. The characteristics of the contacts from the SSS profile prompted further investigation by divers.

Divers located sunken concrete boxes 9.1 m long, 2.4 m wide, 0.9 m off the bottom at both locations. Least depths were taken on the items with the MOD III diver least depth gauge (SN 68332), DN 316, DP #'s 7852 and 7851.

WHITING does not recommend these items be charted. Both items are on the slope of the channel and do not pose a hazard to surface navigation in this area. DO NOT CONCUR

IT IS RECOMMENDED THAT A DANGEROUS SUBMERGED OBSTRUCTION WITH A KNOWN DEPTH OF 16 FT (4.9m), (ISOBAR) BE CHARTED IN LATITUDE 31°58'08.45"N, LONGITUDE 81°03'08.012"W.

**O. COMPARISON WITH THE CHART** SEE ALSO SECTION O. OF THE EVALUATION REPORT.

Soundings from chart 11512 (14th ed., November 28/92, 1:20,000) were compared to H-10581 soundings. As discussed in section M, present survey soundings were generally deeper than charted survey depths.

**P. ADEQUACY OF SURVEY** - SEE ALSO SECTION 7 OF THE EVALUATION REPORT.

This survey is considered complete, and the data acquired are adequate to supersede all prior surveys of the common area.

**Q. AIDS TO NAVIGATION**

Twenty five non-floating aids to navigation were positioned within the survey limits of this sheet in accordance with the Project Instructions. All characteristics were compared to the Light List volume III. All positions were compared to charted positions scaled from Chart 11512 (14th ed., November 28/92, 1:40,000). The following table shows WHITING's surveyed position and the difference between the aid's charted position:

<u>Aid</u>	<u>Position</u>	<u>Position Difference (m)</u>
Beacon G "3"	31°56'14.395"N 080°55'53.590"W	41
Beacon R "4"	31°57'30.642"N 080°56'02.579"W	85
Light R "16"	31°55'09.079"N 080°56'44.194"W	59
Light G "17"	31°55'10.685"N 080°57'50.696"W	96
Light G "19"	31°55'58.004"N 080°58'34.439"W	64
Beacon R "20"	31°56'06.407"N 080°58'14.848"W	73
Light R "22"	31°56'56.547"N 080°59'20.316"W	38
Light G "23"	31°58'26.844"N 081°00'36.344"W	83
Light G "25"	31°59'12.820"N 081°00'16.790"W	87
Light G "27"	32°00'24.998"N 081°00'24.356"W	92
Light G "29"	32°00'33.436"N 081°00'36.538"W	61
Light R "36"	32°01'22.806"N 081°02'35.667"W	69

<u>Aid</u>	<u>Position</u>	<u>Position Difference (m)</u>
Beacon "36A"	32°01'14.487"N 081°02'13.009"W	27
Light "37"	32°01'19.667"N 081°01'49.380"W	47
Light "37A"	32°01'20.948"N 081°01'21.936"W	54
Beacon R "38"	32°01'13.781"N 081°01'21.289"W	71
Light R "40"	32°00'40.505"N 081°00'58.087"W	67
Light R "42"	31°59'35.887"N 081°01'13.732"W	28
Beacon R "44"	31°59'02.291"N 081°02'13.117"W	31
Light G "43"	31°59'15.187"N 081°02'02.502"W	40
Beacon R "44A"	31°58'55.659"N 081°02'18.198"W	33
Beacon R "46"	31°58'43.471"N 081°02'46.890"W	17
Beacon R "46A"	31°58'43.255"N 081°03'17.491"W	20
Beacon R "48"	31°58'35.657"N 081°03'13.786"W	45
Beacon R "48A"	31°58'24.870"N 081°03'10.110"W	13

WHITING recommends all aids which are more than 40 meters from their charted positions, 1mm at the scale of the chart, be moved to their current survey positions.

The following aids, which are listed above, are charted as PA:

Aid  
 Light G "17"  
 Light G "25"  
 Light R "40"  
 Light R "46A"

WHITING recommends these aids be charted at the surveyed position and the PA be deleted. ~~CONC02~~

## **R. STATISTICS**

Number of Positions.....	5060
Main-scheme Sounding Lines (Nautical Miles).....	365
Crosslines (Nautical Miles).....	44
Square Nautical Miles Surveyed.....	8
Days of Production.....	17
Detached Positions.....	129
Bottom Samples.....	73
Tide Stations Installed.....	5
Current Stations.....	0
Number of CTD Casts.....	7
Magnetic Stations.....	0

## **S. MISCELLANEOUS**

Bottom samples for the survey area were acquired in accordance with the Project Instructions. As specified in the Project Instructions, the samples were taken at an approximate spacing of 600 meters. Oceanographic log sheets for H-10581 are submitted with the data for this survey. Bottom samples were submitted to the Smithsonian Institution as per Project Instructions.

Two storms during the survey period caused major flooding in the Savannah area. Tide values for the area were three feet or more higher than predicted values at times during hydrography. No other anomalies in either tide or current and/or unusual magnetic variations were encountered in the survey area.

## **T. RECOMMENDATIONS - SEE ALSO SECTION P OF THE EVALUATION REPORT.**

Recommendations concerning specific items are located in section N of this report.

**U. REFERRAL TO OTHER REPORTS**

The following reports were submitted under separate cover as part of OPR-G115-WH:

Water Clarity Report  
User Evaluation Report

Submitted By:

Eric W. Berkowitz  
Lieutenant (Junior Grade), NOAA

NOAA SHIP WHITING  
ITEM INVESTIGATION REPORT  
OPR-G115-WH

SURVEY H-10581 FIELD SHEET WH-10-10-94 A (1)

ITEM NUMBER 7796 DCS

CHART NO. (largest scale) 11502, 52nd ed., Jan 8, 1994, 1:40,000

DESCRIPTION OR CROSS REFERENCE(S): Just outside of search radius  
for AWOIS 9011

AWOIS POS: L 31° ' ' " N  
(NAD 83) λ 080° ' ' " W

SSS POS: L 31° 58 ' 09 " N  
λ 080° 03 ' 08 " W  
E 4047  
N 20626

METHOD OF INVESTIGATION: (circle)

Echosounder

Diver

Other (specify) \_\_\_\_\_

DIVE DATA: Divers Berkowitz Pavelle Quinn Beaver  
Time of Dive (UTC): Commenced 0932-1432 Completed 0938-1438  
Current Slack 0.5 kts 1 kt 1.5+ kts Bottom Type S Sh M P  
Visibility 0 1 2 3 4 5 6 7 8 9 >10

INVESTIGATION NOTES:  $P_{ms} = 14.90$   $P_{est} = 22.76$   $P_{wt} = 14.98$

Concrete  
one box Met boxes + debris, 30 ft x 8 ft, 3 ft high, hollow  
Sample was brought to surface by divers.

POSITION: Date/DN 12 NOV 94 1316 Time (UTC) 140753 Fix # 7852  
Easting 4045.8 Northing 20620.1  
Latitude 31° 58 '09.065" N Longitude 080° 03 '07.632" W  
LORAN C: W 14 X 31 Y 45 Z 61  
(LORAN for AWOIS only. GRI = 7980, S.E. United States.)

LEAST Date/DN 12 NOV 94 1316 Time (UTC) 1436  
DEPTH: Method Pneumogauge Leadline DSF-6000N MOD3  
S/N 138921 30 A105N A106N A112N C076 68332

Measured Depth/PSIA: 1. \_\_\_\_\_ 2. \_\_\_\_\_ 3. \_\_\_\_\_ Avg. 5.4 m ft

Uncorrected Depth: 5.4 meters  
Tide Corrector: -0.4 meters  
Draft Corrector: 0 meters  
Velocity Corrector: 0 meters  
CORRECTED LEAST DEPTH: 5.0 meters

Recorder EWB

Checked by \_\_\_\_\_

IN SAME AREA OF CONTACT #7799.145. NO CHANGE IN CHARTING IS  
RECOMMENDED.



17:56:39

100K  
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050M

100K  
2  
050M

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2  
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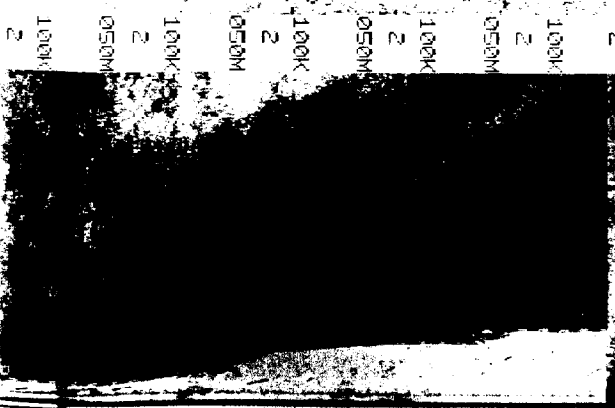
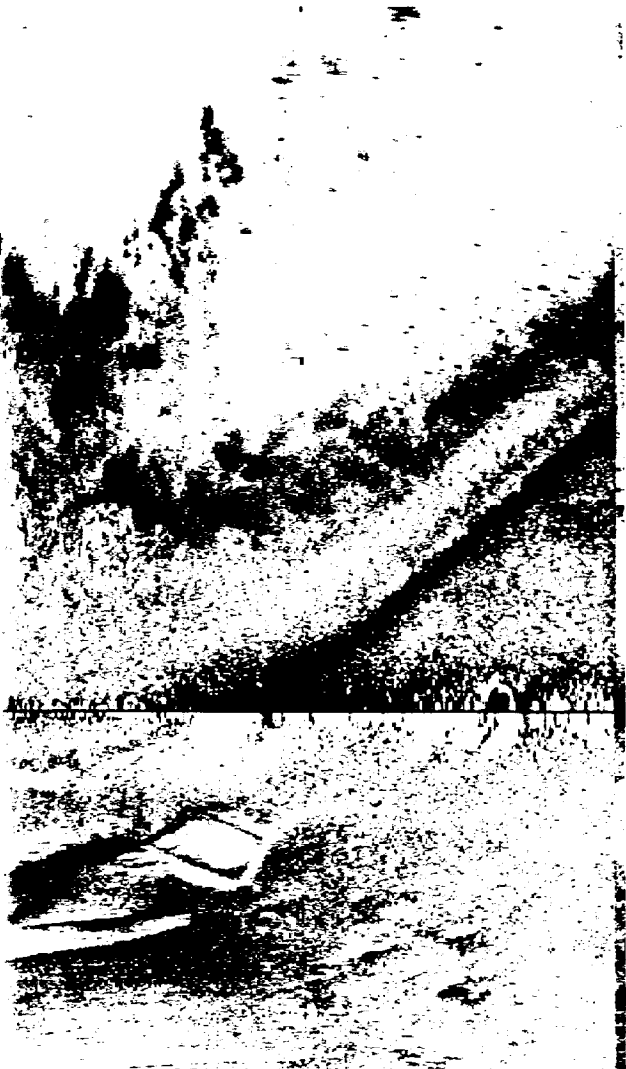
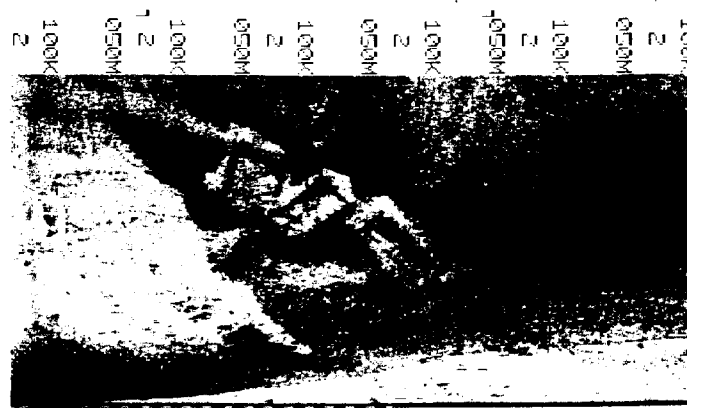
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NOAA SHIP WHITING  
ITEM INVESTIGATION REPORT  
OPR-G115-WH

SURVEY H-10581 FIELD SHEET WH-10-10-94 A (1)

ITEM NUMBER 7799.143

CHART NO. (largest scale) 11502. 52nd ed., Jan 8, 1994, 1:40,000

DESCRIPTION OR CROSS REFERENCE(S): Test outside Search Radius  
for Areas 9011

AWOIS POS: L 31° ' " N  
(NAD 83) λ 080° ' " W

SSS POS: L 31° 58 ' <sup>08</sup> " N  
λ 080° 03 ' <sup>08</sup> " W  
E 4036  
N 20604

METHOD OF INVESTIGATION: (circle)

Echosounder

Diver

Other (specify) \_\_\_\_\_

DIVE DATA: Divers Berkowitz Pavelle Quinn Beaver  
Time of Dive (UTC): Commenced 0921 <sup>1421</sup> Completed 0931 <sup>1431</sup>  
Current Slack 0.5 kts 1 kt 1.5+ kts Bottom Type S Sh M P  
Visibility 0 1 2 3 4 5 6 7 8 9 >10

INVESTIGATION NOTES:

P<sub>in</sub> = 14.95 P<sub>o</sub> = 22.20 P<sub>out</sub> = 14.96  
Concrete  
Rectangular box 30ft x 8ft, empty, metal, 3ft high

Sample was brought back to surface by divers

POSITION: Date/DN 12 NOV 94 1316 Time (UTC) 140220 Fix # 7851  
Easting 4035.8 Northing 20601.0  
Latitude 31° 58 ' 08.445 " N Longitude 080° 03 ' 08.012 " W  
LORAN C: W 14 X 31 Y 45 Z 61  
(LORAN for AWOIS only. GRI = 7980, S.E. United States.)

LEAST DEPTH: Date/DN 12 NOV 94 1316 Time (UTC) 0931 <sup>1430</sup>  
Method Pneumogauge Leadline DSF-6000N MOD3  
S/N 138921 30 A105N A106N A112N C076 68332

Measured Depth/PSIA: 1. \_\_\_\_\_ 2. \_\_\_\_\_ 3. \_\_\_\_\_ Avg. 5.1 m ft

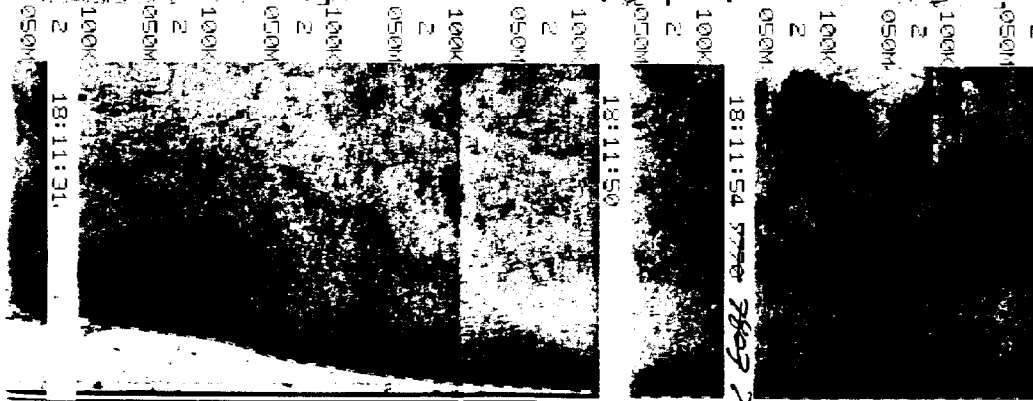
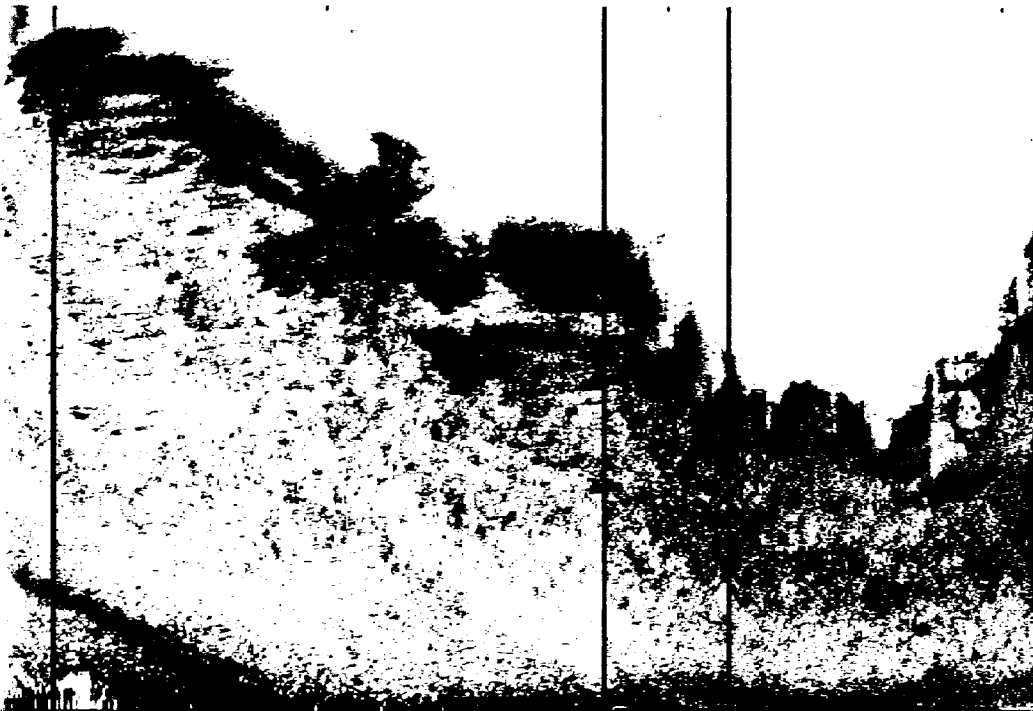
Uncorrected Depth: 5.00 5.1 meters  
Tide Corrector: -0.5 meters  
Draft Corrector: 0 meters  
Velocity Corrector: 0 meters  
CORRECTED LEAST DEPTH: 4.6 meters

Recorder CWB

Checked by \_\_\_\_\_

SEE SECTION 108, PAGE 16 OF 1100 REPORT FOR CHARTING RECOMMENDATIONS





18:11:54 7700 7803 7804

## **APPENDIX III**

### **LIST OF HORIZONTAL CONTROL STATIONS**

Station Listing for 31-58 N, 32-03 N, 80-50 W, 80-55 W (Tybee Island)

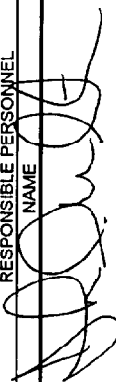
ACRN	DESIGNATION	LAST_REC	COND	LATITUDE	LONGITUDE
BR1008	H 56 GA			N315810.17155	W0805150.78218
BR1602	SOUTH END RM 2			N315913.	W0805105.
BR1603	SOUTH END RM 3			N315913.	W0805105.
BR1862	SOUTH END RM 5			N315913.	W0805105.
BR1861	SOUTH END RM 4			19900301G	N315913. W0805106.
<u>BR1007</u>	<u>SOUTH END</u>			<u>19900301G</u>	<u>N315914.30661 W0805104.85098</u>
BR1861	SOUTH END RM 4			19900301G	N315914.37145 W0805105.29529
BR1862	SOUTH END RM 5			N315914.91797	W0805104.95794
BR1863	SOUTH END RM 6			N315915.	W0805106.
BR1863	SOUTH END RM 6			N315916.96808	W0805105.08474
BR1613	NEAL RM			N315921.	W0805316.
BR1018	NEAL	1965	G	N315922.26339	W0805316.05066
CK5938	BV 025 231			N320004.	W0805045.
CK5939	BV 025 231 RM 1			N320005.	W0805045.
CK5938	BV 025 231			N320005.51551	W0805044.50187
CK5939	BV 025 231 RM 1			N320006.04132	W0805044.28341
CK5941	BV 025 232 RM 1			N320030.	W0805032.
CK5940	BV 025 232			N320031.	W0805032.
CK5941	BV 025 232 RM 1			N320031.95848	W0805032.98730
CK5940	BV 025 232			N320032.42309	W0805032.80627
CK3750	SAVANNAH BEACH MUNICIPAL TANK	1983	G	N320040.49407	W0805031.08670
CK3754	H 50 GA PTA			N320044.86332	W0805028.10652
CK3753	H 50 GA			N320045.16703	W0805027.98606
CK3762	LAZARETTO CR HWY BRI CEN SPAN	1964	O	N320049.63724	W0805301.00376
CK0657	TIDAL 3 STA 2	1975	N	N320052.	W0805215.
CK5943	BV 025 233 AZ MK			N320053.	W0805239.
CK5943	BV 025 233 AZ MK			N320054.75226	W0805239.88424
CK5942	BV 025 233			N320055.	W0805253.
CK5944	BV 025 233 RM 1			N320055.	W0805254.
CK5942	BV 025 233			N320056.58305	W0805252.52449
CK5944	BV 025 233 RM 1			N320056.59062	W0805253.30136
CK0656	E 56	1955	G	N320101.	W0805044.
CK5784	A 393			N320107.	W0805402.
CK3740	WEST BASE	1984	G	N320109.34180	W0805149.43261
CK0655	B 56	1955	G	N320110.	W0805052.
CK0659	N 206	1962	G	N320110.	W0805124.
CK3755	ABE 1963			N320111.72641	W0805033.65096
CK4835	FORT RM 1			N320113.	W0805036.
CK0691	867 0870 TIDAL 2			19910221G	N320115. W0805356.
CK4836	FORT RM 2			N320116.	W0805038.

CK5286 QUARANTINE RM 1 N320216. W0805339.  
CK3776 QUARANTINE 1964 N N320222.85261 W0805341.02785  
CK3738 JONES ISLAND RANGE FRONT LIGHT 1974  
G N320231.71243 W0805110.09256  
CK3742 JONES ISLAND RANGE REAR LIGHT 1974 G N320240.43960  
W0805140.13808

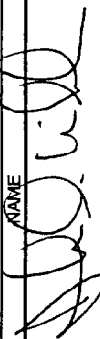
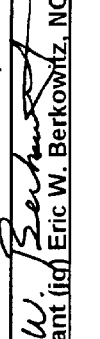
## **APPENDIX II**

### **NON-FLOATING AIDS AND LANDMARKS FOR CHARTS**

NOAA FORM 76-40 (8-74) Replaces C&GS Form 567.				U.S. DEPARTMENT OF COMMERCE NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION				NONFLOATING AIDS OR LANDMARKS FOR CHARTS		ORIGINATING ACTIVITY	
<input type="checkbox"/> TO BE CHARTED <input type="checkbox"/> TO BE REVISED <input type="checkbox"/> TO BE DELETED		REPORTING UNIT (Field Party, Ship or Office) NOAA Ship WHITING		STATE Georgia		LOCALITY Wilmington River		DATE 12-14-94		<input checked="" type="checkbox"/> HYDROGRAPHIC PARTY <input type="checkbox"/> GEODETIC PARTY <input type="checkbox"/> PHOTO FIELD PARTY <input type="checkbox"/> COMPILATION ACTIVITY <input type="checkbox"/> FINAL REVIEWER <input type="checkbox"/> QUALITY CONTROL AND REVIEW GRP. <input type="checkbox"/> COAST PILOT BRANCH (See reverse for responsible personnel)	
The following objects HAVE <input type="checkbox"/> HAVE NOT <input type="checkbox"/> been inspected from seaward to determine their value as landmarks.				OPR PROJECT NO. OPR-G115-WH		JOB NUMBER WH-10-11-94		SURVEY NUMBER H-10581		DATUM NAD 83	
CHARTING NAME	DESCRIPTION (Record reason for deletion of landmark or aid to navigation. Show triangulation station name, where applicable, in parentheses)	LATITUDE		POSITION		LONGITUDE		METHOD AND DATE OF LOCATION (See instructions on reverse side)		CHARTS AFFECTED	
		° ' "	D.M. Meters	° ' "	D.P. Meters	° ' "	D.P. Meters	OFFICE	FIELD		
Beacon G "3"		31 56	14.395	080 55	53.590				F-DGPS 10-29-94	11512	
Beacon R "4"		31 57	30.642	080 56	02.579				F-DGPS 10-29-94	"	
Light R "16"		31 55	09.079	080 56	44.194				F-DGPS 10-28-94	"	
Light G "17"		31 55	10.685	080 57	50.696				F-DGPS 10-28-94	"	
Beacon R "20"		31 56	06.407	080 58	14.848				F-DGPS 10-28-94	"	
Light G "23"		31 58	26.844	081 00	36.344				F-DGPS 10-28-94	"	
Light G "25"		31 59	12.820	081 00	16.790				F-DGPS 10-28-94	"	
Light G "27"		32 00	24.993	081 00	24.356				F-DGPS 10-28-94	"	
Light G "29"		32 00	33.436	081 00	36.538				F-DGPS 10-28-94	"	
Light R "36"		32 01	22.806	081 02	35.667				F-DGPS 11-11-94	"	

TYPE OF ACTION		RESPONSIBLE PERSONNEL		ORIGINATOR	
		NAME			
OBJECTS INSPECTED FROM SEAWARD				<input type="checkbox"/> PHOTO FIELD PARTY <input checked="" type="checkbox"/> HYDROGRAPHIC PARTY <input type="checkbox"/> GEODETIC PARTY <input type="checkbox"/> OTHER (Specify)	
POSITIONS DETERMINED OR VERIFIED		Commander John D. Wilder, NOAA		FIELD ACTIVITY REPRESENTATIVE	
FORMS ORIGINATED BY QUALITY CONTROL AND REVIEW GROUP AND FINAL REVIEW ACTIVITIES		Eric W. Berkowitz Lieutenant (jg) Eric W. Berkowitz, NOAA		OFFICE ACTIVITY REPRESENTATIVE	
INSTRUCTIONS FOR ENTRIES UNDER 'METHOD AND DATE OF LOCATION' (Consult Photogrammetric Instructions No. 64)					
OFFICE		FIELD (Cont'd)			
I. OFFICE IDENTIFIED AND LOCATED OBJECTS Enter the number and date (including month, day, and year) of the photograph used to identify and locate the object. EXAMPLE: 75E(C) 6042 8-12-75		B. Photogrammetric field positions** require entry of method of location or verification, date of field work and number of the photograph used to locate of identify the object. EXAMPLE: P-8-V 8-12-75 74L(C) 2982			
FIELD		II. TRIANGULATION STATION RECOVERED When a landmark or aid which is also a triangulation station is recovered, enter 'Triang. Rec.' with date of recovery. EXAMPLE: Triang. Rec. 8-12-75			
I. NEW POSITION DETERMINED OR VERIFIED Enter the applicable data by symbols as follows: F - Field L - Located V - Verified 1 - Triangulation 2 - Traverse 3 - Intersection 4 - Resection 5 - Field identified 6 - Theodolite 7 - Planetable 8 - Sextant		III. POSITION VERIFIED VISUALLY ON PHOTOGRAPH Enter 'V-Vis.' and date. EXAMPLE: V-Vis. 8-12-75			
A. Field positions* require entry method of location and date of field work. EXAMPLE: F-2-6-L 8-12-75		**PHOTOGRAMMETRIC FIELD POSITIONS are dependent entirely, or in part, upon control established by photogrammetric methods.			
*FIELD POSITIONS are determined by field obser-					

[illegible]

RESPONSIBLE PERSONNEL															
TYPE OF ACTION	NAME														
OBJECTS INSPECTED FROM SEAWARD	 Commander John D. Wilder, NOAA														
POSITIONS DETERMINED OR VERIFIED	 Lieutenant (jg) Eric W. Berkowitz, NOAA														
FORMS ORIGINATED BY QUALITY CONTROL AND REVIEW GROUP AND FINAL REVIEW ACTIVITIES															
<div style="display: flex; justify-content: space-between;"> <div> <input type="checkbox"/> PHOTO FIELD PARTY  <input checked="" type="checkbox"/> HYDROGRAPHIC PARTY  <input type="checkbox"/> GEODETIC PARTY  <input type="checkbox"/> OTHER (Specify)         </div> <div>FIELD ACTIVITY REPRESENTATIVE</div> </div> <div style="display: flex; justify-content: space-between;"> <div> <input type="checkbox"/> REVIEWER  <input type="checkbox"/> QUALITY CONTROL AND REVIEW GROUP  <input type="checkbox"/> REPRESENTATIVE         </div> <div>OFFICE ACTIVITY REPRESENTATIVE</div> </div>															
<p align="center"><b>INSTRUCTIONS FOR ENTRIES UNDER 'METHOD AND DATE OF LOCATION'</b> (Consult Photogrammetric Instructions No. 64)</p> <div style="display: flex;"> <div style="flex: 1;"> <p><b>OFFICE</b></p> <p><b>I. OFFICE IDENTIFIED AND LOCATED OBJECTS</b> Enter the number and date (including month, day, and year) of the photograph used to identify and locate the object. EXAMPLE: 75E(C) 6042 8-12-75</p> <p><b>FIELD</b></p> <p><b>I. NEW POSITION DETERMINED OR VERIFIED</b> Enter the applicable data by symbols as follows:</p> <table border="0"> <tr> <td>F - Field</td> <td>P - Photogrammetric</td> </tr> <tr> <td>L - Located</td> <td>Vis - Visually</td> </tr> <tr> <td>V - Verified</td> <td></td> </tr> <tr> <td>1 - Triangulation</td> <td>5 - Field identified</td> </tr> <tr> <td>2 - Traverse</td> <td>6 - Theodolite</td> </tr> <tr> <td>3 - Intersection</td> <td>7 - Planetable</td> </tr> <tr> <td>4 - Resection</td> <td>8 - Sextant</td> </tr> </table> <p>A. Field positions* require entry method of location and date of field work. EXAMPLE: F-2-6-L 8-12-75</p> <p>*FIELD POSITIONS are determined by field obser-</p> </div> <div style="flex: 1;"> <p><b>FIELD (Cont'd)</b></p> <p><b>B. Photogrammetric field positions** require entry of method of location or verification, date of field work and number of the photograph used to locate of identify the object.</b> EXAMPLE: P-8-V 8-12-75 74L(C) 2982</p> <p><b>II. TRIANGULATION STATION RECOVERED</b> When a landmark or aid which is also a triangulation station is recovered, enter 'Triang. Rec.' with date of recovery. EXAMPLE: Triang. Rec. 8-12-75</p> <p><b>III. POSITION VERIFIED VISUALLY ON PHOTOGRAPH</b> Enter 'V-Vis.' and date. EXAMPLE: V-Vis. 8-12-75</p> <p><b>**PHOTOGRAMMETRIC FIELD POSITIONS are dependent entirely, or in part, upon control established by photogrammetric methods.</b></p> </div> </div>		F - Field	P - Photogrammetric	L - Located	Vis - Visually	V - Verified		1 - Triangulation	5 - Field identified	2 - Traverse	6 - Theodolite	3 - Intersection	7 - Planetable	4 - Resection	8 - Sextant
F - Field	P - Photogrammetric														
L - Located	Vis - Visually														
V - Verified															
1 - Triangulation	5 - Field identified														
2 - Traverse	6 - Theodolite														
3 - Intersection	7 - Planetable														
4 - Resection	8 - Sextant														



**U.S. DEPARTMENT OF COMMERCE**  
**National Oceanic and Atmospheric Administration**  
**Office of NOAA Corps Operations**  
**NOAA Ship WHITING S-329**  
**439 W. York Street**  
**Norfolk, VA 23510-1114**

December 15, 1994

Commander, Seventh Coast Guard District  
Brickell Plaza Federal Building Room 406  
909 SE First Avenue  
Miami, Florida 33131-3050

Dear Sir:

The NOAA Ship WHITING recently completed hydrographic survey operations in the Wilmington River and Wassaw Sound, Georgia. Two locations within the survey area have changed considerably since they were last surveyed. Enclosed are reports concerning these locations and two chartlets which show current survey soundings. The following is a summary of the results:

<u>Feature</u>	<u>Depth</u>	<u>Position</u>
Sounding	0.9m (3ft)	31°57'07"N, 080°59'53"W
Sounding	1.2m (4ft)	31°57'00"N, 080°59'26"W
Sounding	0.6m (2ft)	31°56'13"N, 080°55'33"W
Sounding	1.2m (4ft)	31°56'05"N, 080°55'24"W

Differential GPS was used to determine survey positions. Positions are referenced to NAD 83. All depths are referenced to MLLW using predicted tides. Chart 11512 is the largest scale chart affected.

A copy of this letter and attachments have been forwarded to the following offices:

Chief, Nautical Charting Division, NOAA  
Chief, AMC Operations Division, NOAA  
Chief, Atlantic Hydrographic Section  
Director, Defense Mapping Agency  
Hydrographic/Topographic Center

Sincerely,

John D. Wilder  
Commander, NOAA  
Commanding Officer

Enclosures

cc: AMC1  
N/CG2  
N/CG244  
DMAHTC



# REPORT OF UNCHARTED SUBMERGED FEATURE

Hydrographic Survey Registry Number: H-10581

State: Georgia

General Locality: Wilmington River

Sublocality: Wassaw Sound to Williamson Creek

Project Number: OPR-G115-WH

The following feature was found during hydrographic survey operations by the NOAA Ship WHITING:

## Object Discovered:

The Northern bank of the Wilmington River near the entrance to Tybee Cut has shoaled since previously surveyed. Depths as shallow as 0.9 m (3 ft) extend out to the previously charted 5.7 m (18 ft) contour. Previously uncharted shoal depths and positions are:

<u>Depth</u>	<u>Position</u>
0.9m (3ft)	31°57'07"N, 080°59'53"W
1.2m (4ft)	31°57'00"N, 080°59'26"W

## Covers:

Raytheon Digital Survey Fathometer (DSF) 6000N echo sounders were used to measure bottom depths during the survey. All soundings have been corrected to MLLW with predicted tide correctors. Twenty-five and fifty meter line spacing was used to develop the area.

## Affected Nautical Charts:

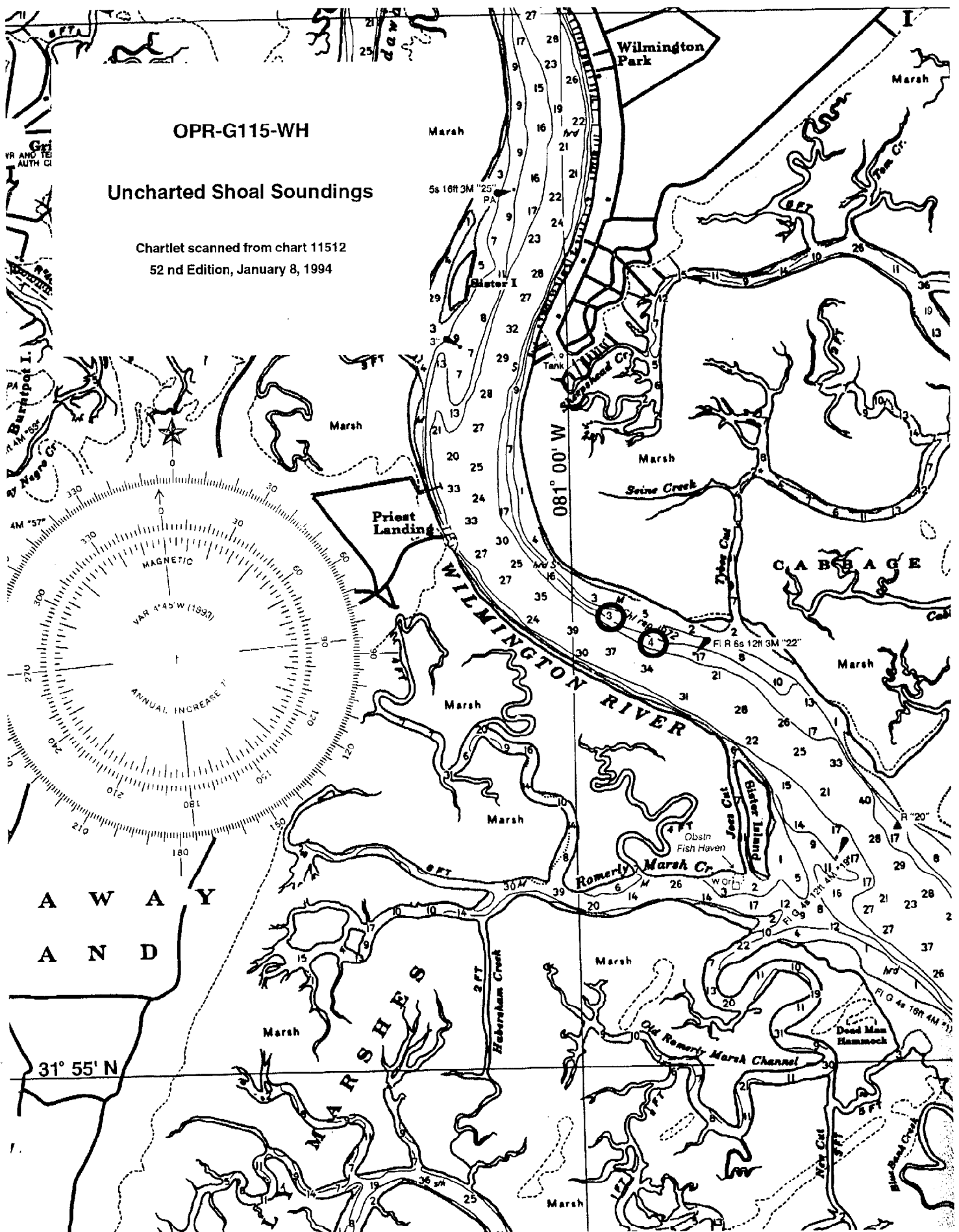
<u>Chart</u>	<u>Edition</u>	<u>Reported</u>	<u>Chart</u>	<u>Geographic Location</u>
<u>Number</u>	<u>No.</u> <u>Date</u>	<u>Depth</u>	<u>Datum</u>	<u>Latitude</u> <u>Longitude</u>
11512	14 11/28/92	N/A	NAD83	31°57'04"N 080°59'40"W

Questions concerning this report should be directed to the Atlantic Hydrographic Section in Norfolk, Virginia, at (804) 441-6746.

OPR-G115-WH

# Uncharted Shoal Soundings

Chartlet scanned from chart 11512  
52 nd Edition, January 8, 1994



# REPORT OF UNCHARTED SUBMERGED FEATURE

Hydrographic Survey Registry Number: H-10581

State: Georgia

General Locality: Wilmington River

Sublocality: Wassaw Sound to Williamson Creek

Project Number: OPR-G115-WH

The following feature was found during hydrographic survey operations by the NOAA Ship WHITING:

## Object Discovered:

The NE bank of the Bull River at the mouth of Wassaw Sound has migrated into the channel. Depths have shoaled considerably in this area. Previously uncharted shoal depths and positions are:

<u>Depth</u>	<u>Position</u>
0.6m (2ft)	31°56'13"N, 080°55'33"W
1.2m (4ft)	31°56'05"N, 080°55'24"W

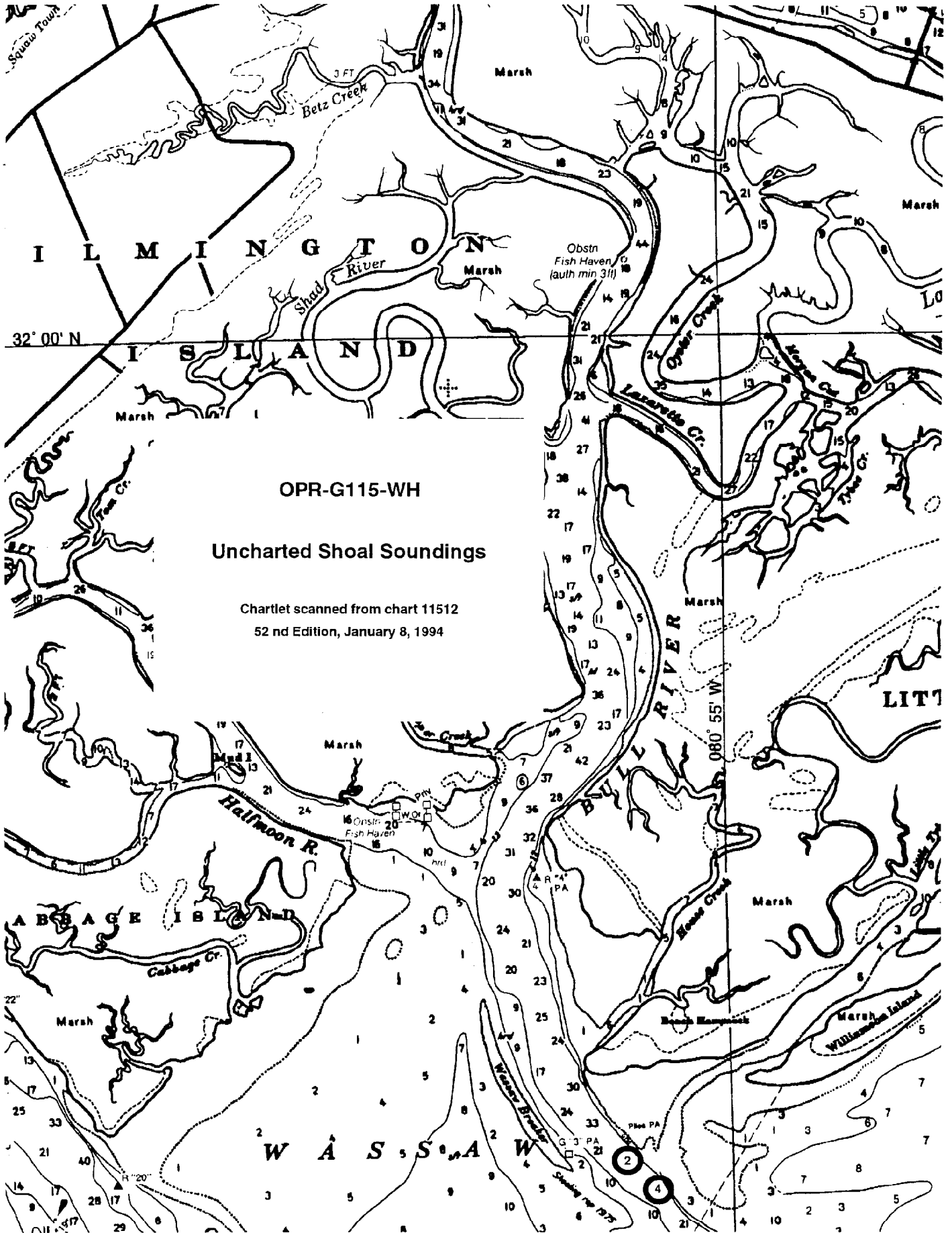
## Covers:

Raytheon Digital Survey Fathometer (DSF) 6000N echo sounders were used to measure bottom depths during the survey. All soundings have been corrected to MLLW with predicted tide correctors. Fifty meter line spacing was used to collect sounding data.

## Affected Nautical Charts:

<u>Chart</u> <u>Number</u>	<u>Edition</u> <u>No.</u>	<u>Date</u>	<u>Reported</u> <u>Depth</u>	<u>Chart</u> <u>Datum</u>	<u>Geographic Location</u> <u>Latitude</u>	<u>Longitude</u>
11512	14	11/28/92	N/A	NAD83	31°56'09"N	080°55'30"W

Questions concerning this report should be directed to the Atlantic Hydrographic Section in Norfolk, Virginia, at (804) 441-6746.



APPROVAL SHEET  
FIELD EXAMINATION SURVEY  
OPR-G115-WH  
WH-10-11-94  
1994  
H-10581

The data for this survey were acquired and checked under my daily supervision. Position and sounding accuracy meet the requirements specified in the Hydrographic Manual, the Hydrographic Survey Guidelines, and the Field Procedures Manual for Hydrographic Surveying. This survey is adequate, in the areas fully surveyed, for the intended purpose of delineating bottom topography and determining depths and identifying all potential dangers to navigation.

Approved By:



John D. Wilder  
Commander, NOAA  
Commanding Officer



UNITED STATES DEPARTMENT OF COMMERCE  
National Oceanic and Atmospheric Administration  
NATIONAL OCEAN SERVICE  
Office of Ocean and Earth Sciences  
Silver Spring, Maryland 20910

## TIDE NOTE FOR HYDROGRAPHIC SURVEY

DATE: March 9, 1995

HYDROGRAPHIC SECTION: Atlantic

HYDROGRAPHIC PROJECT: OPR-G115-WH

HYDROGRAPHIC SHEET: H-10581

LOCALITY: Wilmington River and Wassaw Sound

TIME PERIOD: October 6 - November 14, 1994

TIDE STATION USED: 867-0893 Palmer Johnson Shipyard, Ga.  
Lat.  $32^{\circ} 1.4'N$  Lon.  $81^{\circ} 2.8'W$   
PLANE OF REFERENCE (MEAN LOWER LOW WATER): 6.41 ft.  
HEIGHT OF HIGH WATER ABOVE PLANE OF REFERENCE: 8.0 ft.

TIDE STATION USED: 867-0967 Turner Creek, Ga.  
Lat.  $32^{\circ} 0.5'N$  Lon.  $80^{\circ} 59.9'W$   
PLANE OF REFERENCE (MEAN LOWER LOW WATER): 9.31 ft.  
HEIGHT OF HIGH WATER ABOVE PLANE OF REFERENCE: 7.7 ft.

TIDE STATION USED: 867-1086 Skidaway Institute, Ga.  
Lat.  $31^{\circ} 59.4'N$  Lon.  $81^{\circ} 1.4'W$   
PLANE OF REFERENCE (MEAN LOWER LOW WATER): 7.39 ft.  
HEIGHT OF HIGH WATER ABOVE PLANE OF REFERENCE: 7.9 ft.

TIDE STATION USED: 867-1314 Halfmoon Reef, Ga.  
Lat.  $31^{\circ} 57.8'N$  Lon.  $80^{\circ} 56.6'W$   
PLANE OF REFERENCE (MEAN LOWER LOW WATER): 6.87 ft.  
HEIGHT OF HIGH WATER ABOVE PLANE OF REFERENCE: 7.2 ft.

TIDE STATION USED: 867-1315 Priest Landing, Ga.  
Lat.  $31^{\circ} 57.8'N$  Lon.  $81^{\circ} 0.7'W$   
PLANE OF REFERENCE (MEAN LOWER LOW WATER): 6.34 ft.  
HEIGHT OF HIGH WATER ABOVE PLANE OF REFERENCE: 7.5 ft.

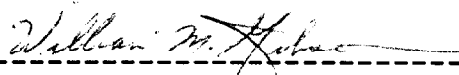


**REMARKS: RECOMMENDED ZONING**

1. In Wilmington River, south of  $31^{\circ} 56.0'N$  and in Wassaw Sound, Bull River and Halfmoon River\*, times and heights are direct on Halfmoon Reef, Ga. (867-1314).
2. In Wilmington River, north of  $31^{\circ} 56.0'N$  and south of  $31^{\circ} 57.0'N$ , apply a -10 minute time correction and a  $\times 0.98$  range ratio to heights using Priest Landing, Ga. (867-1315).
3. In the Wilmington River north of  $31^{\circ} 57.0'N$  and south of  $31^{\circ} 58.0'N$ , times and heights are direct on Priest Landing, Ga. (867-1315).
4. In the Wilmington River north of  $31^{\circ} 58.0'N$  and south of  $31^{\circ} 59.0'N$ , times are direct and apply a  $\times 1.04$  range ratio to heights using Priest Landing, Ga. (867-1315).
5. In the Wilmington River north of  $31^{\circ} 59.0'N$  and south of  $32^{\circ} 01.0'N$  (not including Skidaway River or Turner Creek), times are direct and apply a  $\times 1.08$  range ratio to heights using Priest Landing, Ga. (867-1315).
6. In Wilmington River, north of  $32^{\circ} 01.0'N$ , times and heights are direct on Palmer-Johnson Shipyard, Ga. (867-0893). Where data are not available for Palmer Johnson Shipyard, Ga. (867-0893), apply a +20 minute time correction and a  $\times 1.07$  range ratio to heights using Priest Landing, Ga. (867-1315).
7. In Turner Creek, east of the confluence of Turner Creek and Wilmington River, times and heights are direct on Turner Creek, Ga. (867-0967).
8. In Skidaway River, west of the confluence of Skidaway River and Wilmington River, and east of  $81^{\circ} 02.2'W$ , times and heights are direct on Skidaway Institute, Ga. (867-1086). Where data are not available for Skidaway Institute, Ga. (867-1086), apply a +20 minute time correction and a  $\times 1.06$  range ratio to heights using Priest Landing, Ga. (867-1315).
9. In Skidaway River, west of  $81^{\circ} 02.2'W$ , apply a +10 minute time correction and a  $\times 1.02$  range ratio using Skidaway Institute, Ga. (867-1086). Where data are not available for Skidaway Institute, Ga. (867-1086), apply a +25 minute time correction and a  $\times 1.08$  range ratio to heights using Priest Landing, Ga. (867-1315).

**Note:**

1. Times are tabulated in Eastern Standard Time.
2. \* Caution: Reducers for the full survey area in Halfmoon River are provided as direct on the tides from Halfmoon Reef (867-1314) since no tide gauge was installed nor was any historical data available in the river to provide zoning correctors. The upper reaches of the river may have tidal characteristics which are not replicated by the tide curve at the Halfmoon Reef station.

  
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CHIEF, DATUMS SECTION

## GEOGRAPHIC NAMES

H-10581

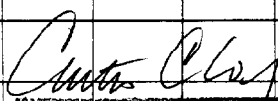
Name on Survey	<div style="display: flex; justify-content: space-between;"> <div style="transform: rotate(-45deg); white-space: nowrap;">ON CHART NO. 11512</div> <div style="transform: rotate(-45deg); white-space: nowrap;">ON PREVIOUS SURVEY NO.</div> <div style="transform: rotate(-45deg); white-space: nowrap;">ON U.S. QUADRANGLE MAPS</div> <div style="transform: rotate(-45deg); white-space: nowrap;">FROM LOCAL INFORMATION</div> <div style="transform: rotate(-45deg); white-space: nowrap;">ON LOCAL MAPS</div> <div style="transform: rotate(-45deg); white-space: nowrap;">P.O. GUIDE OR MAP</div> <div style="transform: rotate(-45deg); white-space: nowrap;">RANDOMLY ATLAS</div> <div style="transform: rotate(-45deg); white-space: nowrap;">U.S. LIGHT LIST</div> </div>										
	A	B	C	D	E	F	G	H	K		
BLUE BANK CREEK	X		X							1	
BULL RIVER	X		X							2	
CABBAGE ISLAND	X		X							3	
CABBAGE ISLAND CUT	X		X							4	
DUTCH ISLAND	X		X							5	
GEORGIA (title)	X		X							6	
HALFMOON RIVER	X		X							7	
HERB RIVER	X		X							8	
HOUSE CREEK	X		X							9	
ISLE OF HOPE	X		X							10	
JOES CUT	X		X							11	
LITTLE TYBEE ISLAND	X		X							12	
PRIEST LANDING	X		X							13	
ROMERLY MARSH CREEK	X		X							14	
SALT POND SHOAL	X		X							15	
SISTER ISLAND	X		X		(2 locations)					16	
SKIDAWAY ISLAND	X		X							17	
SKIDAWAY RIVER	X		X							18	
SYLVAN ISLAND	X		X							19	
TURNER CREEK	X		X							20	
TURNERS ROCK	X		X							21	
TYBEE CUT	X		X							22	
WASSAW BREAKER	X		X							23	
WASSAW ISLAND	X		X							24	
WASSAW SOUND	X		X							25	

## GEOGRAPHIC NAMES

H-10581

Name on Survey	A	B	C	D	E	F	G	H	K
	ON CHART NO.	ON PREVIOUS SURVEY NO.	ON U.S. QUADRANGLE MAPS	FROM LOCAL INFORMATION	ON LOCAL MAPS	P.O. GUIDE OR MAP	GRAND MCNALLY ATLAS	U.S. LIGHT LIST	
WHITEMARSH ISLAND	X		X						1
WILLIAMSON CREEK	X		X						2
WILLIAMSON ISLAND	X		X						3
WILMINGTON ISLAND	X		X						4
WILMINGTON PARK	X		X						5
WILMINGTON RIVER	X		X						6
									7
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Approved

  
Chief Geographer

MAY 9 1995

09/06/95

HYDROGRAPHIC SURVEY STATISTICS  
REGISTRY NUMBER: H-10581

NUMBER OF CONTROL STATIONS		2
NUMBER OF POSITIONS		5060
NUMBER OF SOUNDINGS		24511
	TIME-HOURS	DATE COMPLETED
PREPROCESSING EXAMINATION	48	01/24/95
VERIFICATION OF FIELD DATA	194.50	09/05/95
QUALITY CONTROL CHECKS	20	
EVALUATION AND ANALYSIS	23	
FINAL INSPECTION	20	08/29/95
COMPILATION	0	/ /
TOTAL TIME	305	
ATLANTIC HYDROGRAPHIC BRANCH APPROVAL		09/06/95

**ATLANTIC HYDROGRAPHIC BRANCH  
EVALUATION REPORT FOR H-10581 (1994)**

This Evaluation Report has been written to supplement and/or clarify the original Descriptive Report. Sections in this report refer to the corresponding sections of the Descriptive Report.

**D. AUTOMATED DATA ACQUISITION AND PROCESSING**

The following software was used to process data at the Atlantic Hydrographic Branch:

dBASE IV, version 2.0  
Hydrographic Processing System (HPS)  
AUTOCAD, Release 12  
NADCON, version 2.10

The smooth sheet was plotted using an ENCAD NovaJet III plotter.

**H. CONTROL**

Horizontal control used for this survey during data acquisition is based upon the North American Datum of 1983 (NAD 83). Office processing of this survey is based on these values.

To place this survey on the NAD 27, move the projection lines 0.775 seconds (23.87 meters or 2.38 mm at the scale of the survey) north in latitude, and 0.606 seconds (15.91 meters or 1.59 mm at the scale of the survey) east in longitude.

**J. SHORELINE**

No photogrammetric source data was available for this project. Shoreline for the present survey originates National Ocean Service (NOS) chart 11512 (52<sup>nd</sup> Edition, Jan. 8/94). The shoreline is shown on the smooth sheet in brown and is for orientation purposes only. Numerous piers lie within the limits of this survey. The field unit referenced these piers and located some piers. The field unit did not locate all of the piers within the survey limits. The hydrographer recommends new shoreline compilation throughout the survey area because of extensive natural and cultural change. Office

personnel concur with the hydrographer's recommendation.

#### L. JUNCTIONS

H-10576 (1994) 1:10,000 to the southeast  
H-10582 (1994-95) 1:10,000 to the northeast

Standard junctions could not be effected with survey H-10576 (1994) and H-10582 (1994-95). These junctional surveys are archived at National Ocean Service (NOS) Headquarters, Silver Spring, Maryland and the notes "ADJOINS" is shown on the present survey in both junctional areas. Any adjustment to the depth curves in the junctional areas will have to be made on the chart during compilation at headquarters.

There are no contemporary surveys to the north. Present survey depths are in harmony with the charted hydrography to the north.

#### M. COMPARISON WITH PRIOR SURVEYS

##### Hydrographic

H-5551a (1934) 1:10,000  
 H-5574a (1934) 1:10,000  
 H-5599 (1934) 1:20,000  
H-9865 (1980) 1:20,000

H-5551a (1934) depths compare favorably and show a general trend of varying plus or minus ( $\pm$ ) 1 ft (0<sup>3</sup> m) from present survey depths. Numerous changes along the shoreline are apparent and are attributed to cultural and natural changes.

H-5574a (1934) depths compare favorably and show a general trend of varying plus or minus ( $\pm$ ) 1 ft (0<sup>3</sup> m) from the present survey depths. Numerous changes along the shoreline are apparent and are attributed to cultural and natural changes.

H-5599 (1934) depths compare favorably and show a general

trend of varying plus or minus ( $\pm$ ) 2 ft ( $0^6$  m) from the present survey depths. Numerous changes along the shoreline are apparent and are attributed to cultural and natural changes.

H-9865 (1980) depths compare favorably and show a general trend of varying plus or minus ( $\pm$ ) 1 ft ( $0^3$  m) from the present survey depths.

The differences between the above prior surveys and the present survey are attributed to natural and cultural changes, and/or improved hydrographic surveying methods and equipment.

The present survey is adequate to supersede the prior surveys within the common area.

**O. COMPARISON WITH CHARTS 11512 (35<sup>th</sup> Edition, Jan. 1/94)**

The charted hydrography originates with the previously discussed prior surveys and requires no further consideration. The hydrographer makes adequate chart comparison in sections N. and O. of the Descriptive Report. The following should be noted:

Automated Wreck and Obstruction Information System (AWOIS) Item #9011, a charted dangerous sunken wreck, PA, in Latitude,  $31^{\circ}58'14"N$ , Longitude  $81^{\circ}03'06"W$ , originates with Chart Letter 657 of 1975 (CL657/75). The field unit did not complete an investigation of the entire search area because of an old pier and tree trunk in the search area. During office processing a note on the field printout and the fathogram "remains of barge, AWOIS 9011" was noted. This wreck (barge), in Latitude  $31^{\circ}58'12.44"N$ , Longitude  $81^{\circ}03'05.64"W$ , uncovers  $\frac{3}{4}$  ft ( $0^{\frac{6}{4}}$  m) at MLLW. It is recommended that the wreck be charted as shown on the present survey.

The present survey is adequate to supersede the chart in the common area.

**Dangers To Navigation**

One Danger to Navigation report was submitted to

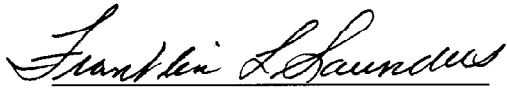
H-10581

Commander, Seventh Coast Guard District (oan), Miami, Florida  
for inclusion in the Local Notice to Mariners, and to the  
Marine Chart Division, N/CS3x1, Silver Spring, Maryland. A  
copy of this report is appended to this report.


P. **ADEQUACY OF SURVEY**

This is an adequate hydrographic/side scan sonar survey;  
no additional work is recommended.

**WHITING Processing Team**

A handwritten signature in cursive script, reading "Franklin L. Saunders", written over a horizontal line.

Franklin L. Saunders  
Cartographic Technician

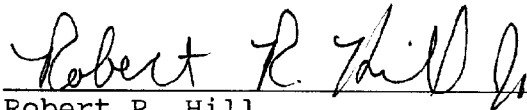
A handwritten signature in cursive script, reading "Norris A. Wike", written over a horizontal line.

Norris A. Wike  
Cartographer

APPROVAL SHEET  
H-10581

**Initial Approvals:**

The completed survey has been inspected with regard to survey coverage, delineation of depth curves, development of critical depths, cartographic symbolization, and verification or disproval of charted data. The digital data have been completed and all revisions and additions made to the smooth sheet during survey processing have been entered in the magnetic tape record for this survey. Final control, position, and sounding printouts of the survey have been made. The survey records and digital data comply with NOS requirements except where noted in the Evaluation Report.



Robert R. Hill  
Cartographer  
Atlantic Hydrographic Branch

Date: SEPT. 5, 1995

I have reviewed the smooth sheet, accompanying data, and reports. This survey and accompanying digital data meet or exceed NOS requirements and standards for products in support of nautical charting except where noted in the Evaluation Report.

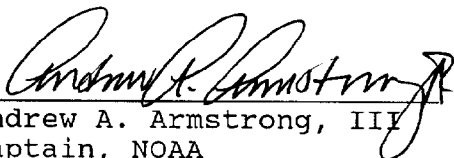


Nicholas E. Perugini  
Commander, NOAA  
Chief, Atlantic Hydrographic Branch

Date: Sept 6, 1995

\*\*\*\*\*

**Final Approval:**

Approved: 

Andrew A. Armstrong, III  
Captain, NOAA  
Chief, Hydrographic Surveys Division

Date: 9/11/95

